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AN ANALYSIS OF THE DEVELOPMENT AND THE
FUTURE OF THE NAVAL SELECTED AIR RESERVE

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OF THE NAVAL SELECTED AIR RESERVE

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Marven Matthews Smith

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OF THE NAVAL SELECTED AIR RESERVE

by

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Lieutenant Commander, United States Naval Reserve

Submitted in partial fulfillment of
the requirements for the degree of

MASTER OF SCIENCE
IN
MANAGEMENT

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OF THE NAVAL SELECTED AIR RESERVE

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This work is accepted as fulfilling
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IN

MANAGEMENT

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ABSTRACT

The organizational development, legislative background and some historical highlights of the present day Naval Selected Air Reserve are presented. The various facets of the existing organization including the support groups and the flying and non flying components are outlined with respect to mission, capabilities, requirements cost and effectiveness. The present and foreseeable military-economic situation is examined with respect to the capabilities and requirements of the Naval Selected Air Reserve and then the feasible alternatives to perform the missions presently envisioned for the Naval Selected Air Reserve are examined. Finally, recommendations as to the most desirable of these alternatives are presented.

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CHAPTER I

INTRODUCTION

The Naval Air Reserve had its inception on 29 August 1916 with the passage of the Naval Appropriation Act for fiscal year 1917. The present Naval Air Reserve Program, more recently designated the Naval Selected Air Reserve, was inaugurated in July of 1946. The existing laws under which the present "Weekend Warrior" operates are even more recent. By way of introduction these points have been mentioned to indicate that while the aviation reserve programs are nearly as old as the regular aviation programs, they have undergone considerable change throughout the years. Recently this change has accelerated as have so many other facets of modern naval warfare. We hope to determine whether or not today's Selected Air Reserve is compatible with the regular forces in the light of these changes. Does the Selected Air Reserve have a feasible mission and is it being accomplished in an economic manner? Is the military worth of the reserve forces being measured by a realistic standard in the light of the present and expected future strategic situation? And finally if the existing structure is not optimal within the present economic-military worth framework what are some of the feasible alternatives.

The purpose of the following paragraphs will be to answer the above questions within the limitations imposed by available unclassified data

on the present reserve components and the admitted uncertainty of the future military-political situation. It is hoped that the study will be of sufficient clarity and definition such that it could assist interested policy making personnel and planners in an accurate reappraisal of the Naval Air Reserve Program. At the very least it should generate an awareness in cognizant personnel that some utilization of modern principles of economics is required for an accurate determination of military worth.

Two important reasons lie behind the necessity for this approach. First is the fact of the complicated interrelationships that exist in the military world. The military world does not stand alone as we finally realized as a nation so forcefully in Korea. The weapon has given way to the weapon system and the weapon system exists only within a balanced force structure which is in turn dependent on intricacies of national and international policy which are in turn affected by the new weapons and strategies.

Secondly and partially because of the interrelationships mentioned the need for efficient expenditure of each military dollar has become critical. The competition for a reduced number of dollars (with respect to increased requirements) has increased in the past few years and because of the complexity and interrelationships of the total systems involved it is more important that the correct decisions are made at an early point in time.

Modern management techniques in general use such as PERT etc. have given us improved ability to budget our funds efficiently within a particular

program. It is important that planners and policy makers extend the use of these techniques into the general area of planning for military effectiveness. Any decision in this area is an economic as well as military-political one, and if approached from this viewpoint the resulting decisions cannot help but be more efficient in the long run.

It is probable that the findings and conclusions that may be drawn will be valid only within the particular economic-military area within which they are constructed. Various external factors are always at work and especially in these areas so that the more efficient solution from an economic-military aspect may well be tempered by apparently extraneous factors before final adoption. One of these factors which may be used as an example concerns the historical use of reserve military forces in general in this country. The military history of the United States has been characterized in the main by the absence of the professional corps comparable to those utilized by nations such as Great Britain, France, Germany, Japan and many others. Neither have we relied on the use of hired mercenaries except in a few isolated instances during the late Indian Wars. The average American when considering the subject of the military mercenary brings to mind not the "gallant" French Foreign Legion but the hated Hessians against which Washington was pitted. Whatever the basic cause of these particular points of view may be, the net result of this state of affairs has been the employment of volunteers and reserves in lieu of professionals and mercenaries in the United States Armed Forces. Reserve forces played a decisive role in each of the eight major conflicts to which the United

States has been a part in the last 180 years. Because of this ingrained reliance on reserve forces in the past there is always the possibility that the present missions of the reserve forces are based less on a strict basis of efficiency than on their assumed inherent value within the general institutional structure. This study will not attempt to incorporate these factors within the actual analysis. They are pointed out though as one of the additional factors that may affect the results of a study based on the less emotionally involved military-economic factors.

In all probability somewhat similar studies have been made within the Department of Defense with reference to the Reserve Components of the Army and the National Guard. Mr. McNamara's statements of last fall concerning the proposed merger of those units and references to "decisions preceded by careful study" leaves little doubt that some sort of economic-military analysis was undertaken in this case. However, because of their already outwardly stringent structures it does not seem probable that the Naval Reserve Components were subjected to the same searching analysis. Considerable correspondence with various policy level officials in the Reserve Officers at Headquarters CNARESTRA in Glenview and in Washington failed to turn up any such previous study. Therefore it is assumed that this is the only such paper utilizing this particular approach devoted to this particular topic to date. By utilizing an objective approach as possible and remaining within the economic framework with respect to criteria and conclusions it is hoped that relevant recommendations will result.

The study will commence with the purely historical background preceding the present Organized Naval Air Reserve and will be roughly divided into two separate areas, the first up to and including World War II and the second from the cessation of hostilities until the present. Each of these sections will discuss the pertinent Laws and Acts under which the Air Reserve operated during varying portions of each period. The physical aspects such as personnel, equipment, facilities and appropriations will be discussed along with the political and strategic forces at work during the various re-organizations. By this method a better understanding of the present organization can be achieved. It should then be possible to compile a complete picture of the present Air Reserve Organization with respect to make-up, mission, and cost. From this point we will discuss the present economic-military situation in general and then how it pertains to the present Reserve organization. The next point in the analysis will be to determine the actual capabilities of the Selected Air Reserve, what portions appear to be required in the light of the previous discussion and finally what are the feasible alternatives in terms of effectiveness and cost. In conclusion an attempt will be made to recommend optimum future courses of action based on all the foregoing.

CHAPTER II

PRIOR TO WORLD WAR II

The authority for the first nucleus of a Naval Air Reserve, actually identified as an "Aeronautic Reserve" to the Naval Militia in the various states was proposed and adopted by the Navy Department in 1915. At this point it was entirely a volunteer organization operating on donated funds. By 1916 a total of ten state run militia units had commenced operations, primarily to satisfy the desire for adventure and flight time among naval oriented aviation enthusiasts. Official federal status was first achieved on 29 August 1916 with the passage of the annual naval appropriations act which contained in that year a rider providing for the establishment of a Naval Reserve Flying Corps.

Naval Aviation itself had only commenced five short years before and was still considered an unlikely stepchild. In 1916 total aviation appropriations were limited to one million dollars. Personnel were limited to 48 officers and 96 enlisted men plus 12 Marine officers and 24 enlisted men. At the time we entered World War I, the total naval and marine aviation manpower had climbed to 48 officers and 239 enlisted men. Meanwhile, the establishment of the Naval Reserve Flying Corps in 1916 had prompted students at several colleges to start flying units. The first of these groups was the Yale Unit which flew an early Curtis flying boat at Peacock Point, Long Island during the summer of 1916. By March of 1918 this unit was training with regular forces and in August two members

of the unit were ordered to France. A number of other units and bases were established shortly after the Yale Unit and the program expanded very rapidly after that. So much so that by the end of the war in November 1918 Naval aviation consisted of over twenty five hundred officers with thirty nine hundred in training and over thirty thousand enlisted men, practically all reserves. Few of the regulars served in France since they were needed to operate the training stations and air fields and to man the battleships in the Fleet.

Considering their modest beginning the record of the aviation branch during World War I was noteworthy in that they had established twenty oversea bases, attacked or sunk twelve submarines and flown almost two and one half million miles of coastal patrol.

The period after the war saw the normal decline in military forces but for naval reserve aviation forces the decline was especially abrupt. So much so that by 1923 when the four year terms of the last Naval Reserve Flying Corps members expired and no money was allotted by Congress for training the reserve aviation force was in effect non-existent.

Fortunately by this time there were among the aviation minded personnel within the Navy Department a few forward looking individuals who wanted to retain some of the reserve bases for training new pilots and to keep some of the wartime aviators proficient if possible. At the same time there was the overall desire to broaden the aviation base and so in 1923 despite the almost total lack of funds the first part of a two prong

program was installed. The first portion of the program was the re-activation of the Naval Reserve Bases. The first to be activated was manned by a volunteer group of New York City Police. The group was based at Fort Hamilton and when the Navy gave them four N-9 aircraft on 22 December 1923 the Naval Aviation Reserve was back in business. The second portion concerned the training of aviators. During the summer of 1923 a total of thirty-three students, normally individuals with previous flying experience were enlisted as Seamen Second Class, given a total of ninety days training and commissioned as Ensigns in the Naval Reserve if they passed a professional examination. These men were returned to their volunteer units to train new recruits. This portion of the program operated at about this level until the first training funds for extended duty were made available by Congress in 1928. These funds had become legally available through passage of the first Naval Reserve Appropriations Act of 1925. This act created the United States Naval Reserve providing for the Fleet Reserve, the Merchant Marine Reserve, and the Volunteer Reserve. Hitherto all reserves had been either State Naval Militias, National Naval Volunteers or the Naval Reserve of men with previous Navy service. The Act also authorized pay for drills and annual training duty.

The Naval Air Reserve Training Program as such was commissioned in 1924 one year prior to the Naval Reserve Appropriations Act of 1925, when a Naval Reserve Division was established within the Bureau of Navigation. The original mission of the program was to "produce qualified Naval Reserve personnel for active duty during time of war." Although a number

of new bases were opened across the country during this period of the late twenties and early thirties the program objectives in general floundered because of lack of funds and good training facilities. Attrition in the regular forces and failure of many of the reserve trainees to meet professional requirements held the manpower base far below the desired levels.

Excellent experience was being obtained in the operating and organizing of the components of the Air Reserve establishment however. Bases were operated by enlisted reserves from the local area who stayed at the one location. These men were commonly known as Station Keepers, a title they hold to this day. The Station Keepers were directed by Reserve officers on short, six to eighteen month tours of duty with a single regular officer as commanding officer. This operating concept developed and perfected during the lean years is basically the same modus operandi under which the present day reserve stations continue to operate. By this time the official mission of the reserve had expanded slightly to "procure, organize, and train the officers and men necessary in the event of war."¹

The first marked improvement in the training program as a whole was designed to bring larger numbers of well trained aviators into the fold. The background of the 1935 Act was very frankly the failure of the earlier programs. The first one year training group of fifty Ensigns graduating from the reserve facilities in 1928 had been a disappointment because of poor training therefore subsequent groups were sent to Pensacola. In

addition the one year limitation and small number involved had not fulfilled Navy Department objectives. With the gradual build up of the Navy to treaty strength (1910 airplanes) there were just not enough bodies to go around. The Bureau of the Budget wanted more enlisted men. The Navy Department wanted more officers so that the Cadet Law became a compromise. The solution was that incumbents spent their entire enlistment period which consisted of four years on active duty as a cadet. At the end of this period they reverted to inactive duty as an Ensign in the Naval Reserve. Only one major change to this program was made prior to World War II. That was the Naval Aviation Reserve Act of 1939 by which cadets were commissioned as Ensigns upon graduation from Pensacola and then became eligible for promotion to Lieutenant (junior grade) after three years active duty with the fleet.

After approximately three years of discussion a new Naval Reserve Act was passed in 1938 superseding the Reserve Act of 1925. Although there were few provisions exclusively applicable to the aviation components there was much of interest to the reserve program as a whole included in this law. The laws' primary effect was to lay down new and revised personnel concepts under which the Naval Reserve would operate through World War II and the Korean Conflict with respect to seniority, promotion and retirement. The first of these was the provision for a normal retirement pay after 20 years active duty or a modified retirement after various combinations of active and inactive duty. This new concept provided a continuity and incentive to reserve service that had hitherto been

lacking. In a somewhat liberalized form under existing laws it still provides in many cases the major retention aid in the continuous struggle to maintain personnel complements at allowed levels.

Other important provisions of the bill included the establishment of a reserve policy board, flag rank for the reserves and liberalized promotion which involved setting up the "running mate" system whereby each reserve's precedence was established with respect to a regular Navy counterpart so that both became eligible for promotion at the same time. These last two clauses did not pass without considerable opposition from the old guard in the Bureau of Aeronautics who felt that "officers of these (flag) ranks would increase the difficulties of regular Navy officers in dealing with the Naval Reserve."² In addition they felt that the section dealing with the relative precedence of reserve officers when mobilized with regular Navy for war or national emergency would interfere with the internal organization of squadrons to which reserve officers were attached.³ The final wording of the law then was a compromise between those who would have placed all reserves behind those of the regular forces with the same grade and those who would have placed all on an equal status based on date of commissioning.

Of the items directly concerned with aviation in the bill the most important were that the Fleet Reserve was to be composed only of personnel transferred from the regular Navy to the Naval Reserve. Complementary to this was the provision that the actively drilling components of the existing

Fleet Reserve which included at the present time the flying squadrons in the aviation units were to be transferred to a new category; The Organized Reserve. This was the inception of the present day Organized Reserve.

Unfortunately the new laws while admittedly improving and clarifying the reserve status did little to alleviate the shortage of trained aviation personnel for the reserve squadrons. The major impediment was a continuing lack of sufficient funds. Several ambitious plans were put forth by both the Bureau of Aeronautics and the Bureau of Navigation, but whenever the Bureau of the Budget cut funds reserve training was the first item deleted from the proposed budget. As early as 1935 minimum mobilization requirements by the time of completion of the Treaty Navy for reserve officers in the various aviation categories was set at 7,453.⁴ At this time there were only 631 reserve officers enrolled in these categories. In 1939 the Bureau of Navigation estimated that with the existing programs there would be 1,548 naval aviators in the reserve by 1 July 1948, despite the fact that the goal was 6,000.

As late as 1940 Bureau of Navigation plans for an increase in aviation cadets at Pensicola were disallowed by the Bureau of the Budget. The aviation Cadet Program was fulfilling one of its original purposes in creating a broader base of trained pilots but practically all graduates were being absorbed into the regular forces so that the reserve squadrons were not able to expand appreciably.

Although the appropriations granted by Congress were the obvious

limiting factor for reserve activities throughout this period there appeared to a general unwillingness at the Secretary of Navy and Department levels to upgrade the priority of reserve training and mobilization requirements.

A Navy Department Board convened to study the problem made this comment:

"The chairman of the House Subcommittee on Naval Appropriations stated that there had been an insistent, widespread urge, bordering on propaganda, to expand the Reserve Appropriation, and that however desirable that maybe, the subcommittee has been advised by the Chief of Naval Operations that there are uses for any money, additional to the Budget that the Congress might be willing to provide, of a much higher priority." ⁵

This condition persisted until war became imminent in 1941. Fortunately however, the ground work for the rapid expansion that was soon to take place had been laid. The organization was sound, morale high and training excellent. But of the thousands of Reserve Pilots that would be required during World War II only 600 were available immediately. It was this trained nucleus that filled the gap in 1941-1942 until the war time training programs hit their stride and in a good part it was the reserve machinery that helped the program to get on its feet during this difficult period.

In summary this initial phase of the aviation reserve program aside from the successful work in World War I was characterized by a continuing but unsuccessful battle to fulfill its basic mission of providing a ready reserve of trained personnel in case of war. The organizational and legal ground work upon which the future reserve forces would be built was

completed however, and some of the areas of discussion as to the proper employment of Reserve and relative priority of the Reserve Programs had been brought out into the open. The thinking at higher policy levels that necessarily shaped the structure and manning level of the reserves, during this between war period necessarily drew on past mobilization experience. Although establishment of a large force prior to hostilities was the published aim apparently the unwritten policy was that sufficient time would be available to train and mobilize after any declaration of war.

NOTES

1. United States Congress, House of Representatives, Committee on Armed Services, Navy Department Appropriations Bill, Hearings before the Committee, 1936, p. 213.
2. United States Navy, Bureau of Aeronautics, Letter from Chief BuAer to Chief BuNav, File Aer-A-ML, QR/P11-1, A18-1, 7 April 1938.
3. Ibid.
4. United States Navy Plans Division, Memorandum to Chief BuAer, file Aer-PL-12-NS, A16 (O-Pers) 10 December 1935.
5. United States Congress, op. cit., 1937, p. 188.

CHAPTER III

WORLD WAR II TO THE PRESENT

As previously noted the number of reserves expanded tremendously during the war. The first period of the reserve program which had been devoted primarily to the organization and development of the framework was finished. During the war training and moving men out to the fleet was the one goal of both the reserve and regular components. By the end of the war eighty seven percent of the total personnel on active duty in the Navy were reserves. Immediately after the war, over three million were demobilized.

In aviation the output grew at a tremendous rate. From 1935 to 1940 only 1,800 reserve cadets had been trained. And in June 1940 there were only 2,965 pilots on active duty in the Navy (with 1,740 aircraft to fly). By the beginning of the war the total number of aviators had risen to almost 6,000 but only 4,000 were combat qualified.

The Navy was determined however, that this vast source of trained manpower would not be completely lost as it had been after World War II. To implement this resolve Secretary of the Navy established a board early in 1945 charged with the responsibility for re-establishing the Naval Reserve Training Program. One of the basic concepts originated by the board was that of an integrated program at departmental levels rather than the separate programs conducted during the 1930's. Immediately below this level surface and air were split with an overall separate command established

for aviation facilities in Chief of Naval Reserve Training (CNARESTRA) stationed at Glenview Ill. The Reserve chain of command is shown in Figure 1.

The machinery for the command was operating by the end of 1945 but the formal commissioning did not take place until July 1946. During this period considerable discussion had ensued as to the actual personnel and organizational formats that would be utilized. Once again the Navy Department stated it could not provide sufficient regular personnel to man the program without impairing other commitments. Congress was equally adamant that the program must operate under a separate budget and funds would be used for reserve purposes only. The solution followed the concept developed in the 1930's in that the program would be manned primarily by reserves retained on active duty under the provisions of the 1938 Act. Regular officers would serve in some of the departmental level billets and as commanding officers of the training activities.

No particular changes were made in personnel or organizational policies until 1951. By that time the call up for the Korean emergency had revealed certain inequities and apparently unfair personnel policies. Under particular attack were those policies concerned with calling up of unaffiliated individuals plus those concerned with reportedly highly restrictive promotion policies. Considerable improvement in the individual reserves status and that of the organization with regards to these aspects were incorporated in the Armed Forces Reserve Act of 1951. However this

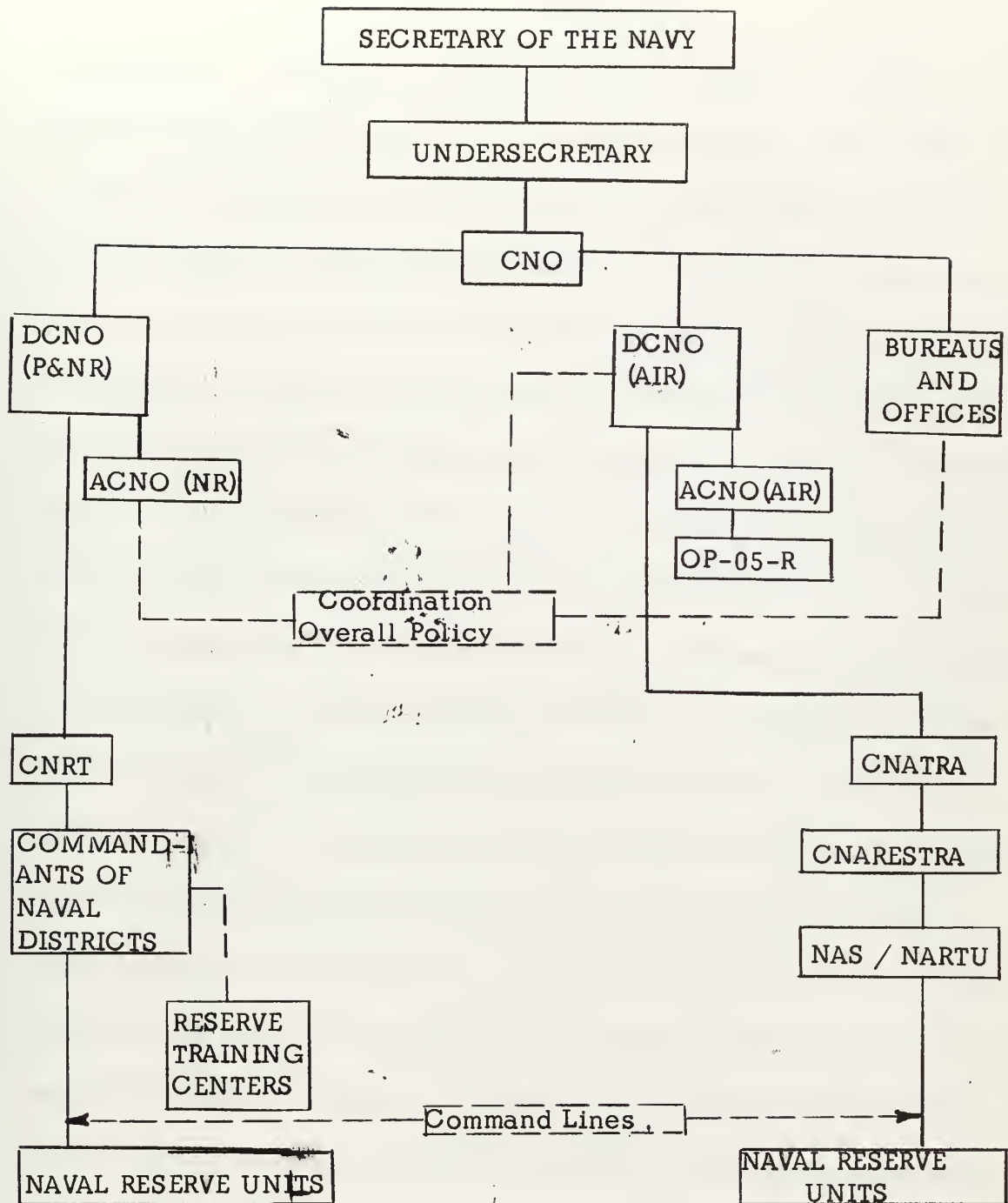


FIGURE 1

NAVAL RESERVE CHAIN OF COMMAND

was not done without considerable opposition from within the Navy Department.¹ The Navy's views on reserve promotion were still considerably more restrictive than those of the other services. Part of this could probably be traced to the fact that there was less emphasis on group training (such as in the National Guard) and more on individual training with the resulting fear of the reserve officer coming aboard a ship or into a squadron on active duty and outranking his regular counterpart. Still further clarification and improvement of promotion, retention, retirement, recall and pay provisions were made in the Reserve Forces Act of 1954. The last major amendments to these acts were made as late as 1959.

The majority of the major organizational changes were incorporated in the 1955 Act. By 1954, the poor condition of the nation's reserves as a whole had been noticed and commented on by many military and political leaders. At that time we had a total of 2.2 million so called ready reservists in all the services but only 695,000 were actually participating in training programs. A large part of the problem at this time was the lack of clarification of the status of the individual with respect to callup. This was a situation which had persisted since the Korean callup when many individuals who had never affiliated with any organized group found themselves among the first to be called. To correct this situation the following three categories within which all reserves are contained were established:

1. The Ready Reserves. Those liable for active duty either in time

of war, in time of national emergency declared by the Congress or proclaimed by the President, or when authorized by law. Within the Navy the selected reserve is part of the ready reserve.

2. The Standby Reserve. Those who are liable for active duty only in time of war or national emergency declared by Congress, or when otherwise authorized by law. No standby reservist in an inactive status can be ordered to active duty involuntarily unless the Secretary of that service determines that reservists in an active status with required qualifications are not available. While not required to do so, a considerable number of standby reservists participated in reserve training programs.

3. The Retired Reserve. Those Reserve personnel who have been retired, some of whom have service connected disabilities. They are subject to recall during time of war or national emergency declared by Congress only after the Secretaries of the individual services determine that there are insufficient numbers of reservists available in an active status.

Within the Navy in addition to the above reservists, enlisted men in the Fleet Reserve are available for recall to fill mobilization billets without further training. These are men who have retired from active service twenty years or more in the regular Forces. They remain in the Fleet Reserve until they have completed a total of 30 years of service.

Other major changes instituted as a result of the 1955 Act, did not

in general pertain to the Naval Air Reserve. Included among these was the establishment of a nationwide operational command for management of Naval Reserve training (except Air Reserves).

To further implement the thinking of the 1955 Act and to improve mobilization responsiveness CNO established in 1958 the "selected reserve." At the present time all of the drill pay organized units and squadrons of the air reserve are included in this category. These units are the ones with which we are particularly concerned since the major portion of the Reserve funds are allocated in one way or another to the maintenance and training of this group.

Specifically the "Selected Reserve" consists of "those individuals and units within the ready reserve of the Naval Reserve designated by CNO as so essential to the initial wartime missions as to require priority treatment." Individuals and units are pre-selected and carry orders to specific assignments in case of mobilization.

Partly because of the personnel policies but primarily because of variations in allotted funds the number of activities and personnel varied considerably during this period. The peak occurred during the late 1940's and through to the early 1950's with 28 major activities located at various air stations and almost 50 satellite activities. Reduction in funds closed ten of the air stations and all of the then existing satellite activities. Today a total of 12 Naval Reserve Air Stations and six Naval Air Reserve Training Units (tenants on regular stations) and four new Naval Air

Reserve Divisions (tenants at surface facilities) provide all of the support for the Selected Air Reserve Program. Table I lists the various active air stations and training units, their active duty complement, and plant account value. Inactive duty personnel on board during this same period ranged from a high of about 43,000 just prior to Korea to low of 14,000² in 1962 after the Berlin Crisis. At the present time the Selected Air Reserve consists of approximately 8,000 officers, half pilots and half ground staff and 19,000 enlisted men directly supported by slightly less than 10,000 active duty personnel.

Of general interest it should be noted that of the nearly one million men in the reserve forces of all the services the Navy contingent numbers approximately 120,000 with approximately 27,000 of the total in the Naval Aviation Program. In addition to the Reserve Forces as such there are at present about 27,000 officers and 55,000 enlisted reserves on active duty with the Regular Forces.

The Reserve Forces achieved several outstanding performances during this same period. The most noteworthy of these was their timely support of the regular forces in Korea. Over 250,000 naval reservists were called to active duty between 1950 and 1953 and more than 11,000 of these were Naval Air Reservists. During a typical month of air operations in Korea 75 percent of the 8,000 sorties were flown by Naval Reserve aviators.

In 1961 Congress authorized the President to recall up to 250,000 reserves in response to the Berlin Crisis. A total of ten Selected Air

TABLE I

NAVAL SELECTED AIR RESERVE FACILITIES*

I Air Stations

Activity	Active Duty Personnel			Plant Account Class I & II
	Officer	Enlisted	Civilian	
Atlanta	41	422	75	5,389,000
Dallas	52	659	102	11,591,000
Glenview	59	704	128	17,700,000
Gross Isle	49	504	94	9,696,000
Los Alamitos	69	851	121	12,069,000
Minneapolis	46	447	91	6,525,000
New Orleans	49	516	103	23,152,000
New York	59	726	151	29,850,000
Olathe	52	511	141	18,650,000
Seattle	53	492	209	35,163,000
So. Weymouth	51	582	117	19,811,000
Willow Grove	62	640	120	14,463,000

II Naval Air Reserve Training Units

Alameda	38	514	12	- - -
Andrews	33	291	12	- - -
Jacksonville	27	327	8	- - -
Lakehurst	20	128	6	- - -
Memphis	25	234	8	- - -
Norfolk	25	182	10	- - -

III Naval Air Reserve Divisions

Birmingham	4	16	-	- - -
Buffalo	4	16	-	- - -
Cincinnati	4	16	-	- - -
Houston	4	16	-	- - -

IV Staff Glenview	75	105	34	- - -
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* Information current as of July 1962.

Reserve, Anti-Submarine Squadrons were recalled for an eleven to twelve month period under this authorization. The group consisted of 676 officers and 2,976 men and 190 aircraft (P2V Neptunes and S2F Trackers) and were augmented by about 170 Reserve Training Command personnel. This recall was a departure from earlier concepts of the reserve program. In the past the reserves were to be utilized only in the event of "a total mobilization or emergency."

Although the Berlin callup was apparently successful in that it amply demonstrated to the Soviets that the United States was prepared to meet force with force over this issue it was less than successful in other ways. In general where reserve forces reported to duty at regular establishments procedures and facilities were not adequate to handle the influx and monumental losses in manpower resulted. This was particularly evident in the Army. However, within the Navy units called the material condition of the reserve training ships and squadrons was well below fleet standards. Much of the ASW equipment being utilized in the reserves was obsolete, personnel shortages existed in critical rates and squadrons were not compatible with fleet units in size or composition. Only two of the units were deployed overseas. Conditions similar to this had not been noted during the Korean period for several reasons. First of all, a large portion of the reservists were recalled as individuals and were moved into regular squadrons to bring them up to wartime strength. In most cases they were working with and flying equipment the same as or quite similar to that of

World War II. This was true also for those units called up en masse. Little transition in tactics or training was required and their equipment was generally current.

Particular note should be made of the several important factors not primarily concerned with personnel or organizational aspects that were behind these differing performances of 1950-1953 and 1961-1962. The first of these was the rapid technological advances that were made in equipment and techniques and the second was the accompanying rise in equipment costs. Superimposed upon these was an overall reduction of funds available to reserves after continuing urgent fleet requirements were met. One personnel factor does enter however and should be mentioned, that is the increasing skill levels required to maintain the new weapons systems. All of these factors will be discussed at length in later paragraphs as they bear on the determination of feasible and recommended future missions for the Aviation Reserves. They have been mentioned at this point since it was during this period that they first began to evidence themselves.

This then concludes the background and developmental aspects of the reserve program as a whole and the Organized Naval Air Reserve, now the Selected Air Reserve, in particular. From the tone and text of recent statements by top level military and civilians within the Navy, DOD and the legislative branch it appears quite certain that the country generally is committed to a substantial reserve force both inactive and

and active as part of the Navy for many years to come. A major shift in the world political and military situation would probably alter this radically but this appears quite unlikely. Whether or not the aviation components can or should retain their present mission and capabilities unchanged is considerably less certain. Continuing developments in many unrelated areas would appear to indicate otherwise.

We will next attempt to fix the Selected Air Reserve as it is at this point in time with respect to men, equipment organization, training, capabilities, cost and above all effectiveness. When this is accomplished these new developments that were mentioned will be discussed along with their effect on the reserve forces.

NOTES

1. United States Senate, House of Representative, Committee and Armed Services, Hearings on HR 486, 1951.
2. This extreme low was due primarily to the enlisted onboard count of approximately 7,000 which was only 25 percent of allowance.

3. This extreme low was due primarily to the fact that the
of approximately 7,000 which was only 10 percent of normal.

CHAPTER IV

THE RESERVE TODAY

The following paragraphs will complete the detailed description of the Selected Naval Air Reserve. Included will be a discussion of the various physical aspects such as personnel, training, equipment, facilities and costs plus a preliminary discussion of some aspects of the present capabilities.

The mission of the Naval Reserve has not changed appreciably in recent years and is presently called out in Title 10, U.S.C., Section 262:

"To provide qualified individuals and trained units to be available for active duty in time of war or national emergency and at such other times as national security may require, to meet the requirements of the Navy in excess of the regular component during and after the period need for procurement and training of additional qualified individuals and trained units to achieve the planned mobilization."

Superimposed on this general statement of purpose and mission is the assigned mission of the Chief of Naval Air Reserve Training to:

1. Maintain Naval Air Reserve personnel in a state of training, readiness and availability for immediate employment as aviation squadrons with aircraft, and as augmentation of the active forces for mobilization requirements.
2. Direct and coordinate the procurement of Naval Aviation Cadets and Aviation Officer Candidates.
3. Furnish logistic support for the Marine Air Reserve Training Command.

4. Support such flight operations of the Regular Navy and Marine Corps as may be directed by the Chief of Naval Operations.

The basic organization and administration of the reserves has not changed in recent years and still holds to the principle of "integrated management" set down in 1946. Under the new General Order 19 the command lines flow from CNO through Chief of Naval Air Training to Chief of Naval Air Reserve Training Units, to the various units and squadrons. Support lines which originate at the Chief of Naval Material flow through the Bureau of Naval Weapons and thence to all organizational command levels as required.

As previously noted the personnel implementing this mission are attached to the eighteen major and four satellite activities shown in Table I. Besides the civilian employees, presently numbering 1,420, and the Standby Reserve there are two major groupings of personnel we will consider in our analysis of the program. These are the active duty support personnel and the inactive Selected Air Reserve. At the present time the active duty group support comprises approximately 9,000 personnel officially known as TARS, a term derived from Training and Administration of Reserves. The 9,000 TARS comprise about 1.3 percent of the 680,000 personnel presently on active duty in the Navy. At present there are roughly 800 USN personnel in this group.

As noted the primary mission of the TAR personnel is the training of the Selected Air Reserve. These men are selected from applicants on

Active Duty and Inactive personnel requesting active duty, and form a separate group that competes among themselves for promotion. This separation is the source of one of the major problems facing the command. That is, the lack of recent fleet operational experience, especially in the VF/VA (J), VP and HS type squadrons (that is fighter and attack jets, patrol and helicopter). Although BuPers Instructions call for rotation to the operating forces as is practical very few such transfers take place due to billet limitation in the TAR programs and because replacement is not guaranteed. The resulting rotation within the command severely limits the new blood interjected at all levels above the very junior and has a substantial effect on many of the Selected Reserve programs. This condition can be especially trying to the recent fleet qualified Selected Air Reservist who often resents and becomes discouraged with what he may rightly consider obsolete methods and requirements.

Several aspects of the assigned secondary missions of CNARESTRA previously mentioned deserve some discussion at this point. Perhaps most important of these is his responsibility to direct and coordinate procurement and recruiting of flight candidates and aviation specialists for the Regular Navy. He also acts as the primary recruiting activity for the enlisted air reservists. To perform these activities efficiently a group of recruiting specialists has evolved within the reserve command and forms the nucleus of a group which is supplemented by other temporarily assigned personnel from within the command. In 1964 this group

consisted of 136 and 253 men respectively. For the past four years over 3,000 flight candidates in various categories that have survived the preliminary mental and physical testing program have been referred annually to the Bureau of Naval Personnel. In addition to this approximately 12,000 enlisted reserves for various programs are recruited annually.

CNARESTRA's responsibilities for logistic support to the Marine Air Reserve Training program occupy a substantial portion of the command's activities due to the substantial size of the Marine contingent which totals about 40 flying squadrons in addition to their support squadrons. The entire Marine flight program utilized about 22 percent of the available flight hours and 25 percent of the operating or Bravo Funds. This is an extremely necessary portion of the mission since the Marine Selected Air Reserve Squadrons do not have facilities of their own.

The final aspect of the assigned mission is that of support of "such flight operations of the Regular Navy and Marine Corps as may be directed by CNO" and occupies a relatively small niche in the total picture. Although the strategic spacing of many of the Reserve Air Stations can be a convenience to the regular forces when dispersing for hurricanes or when individual aviators elect to remain overnight for personal reasons the level of this activity with regards to personnel requirements and facilities is not high. The primary reason for this is that parts and servicing for regular Navy aircraft will seldom be available at a reserve base. So unless a definite deployment is made the month by month levels

remain quite low.

The Selected Air Reserve onboard count as of December 1964 consisted of 21,000 enlisted and 7,200 officers. This was equivalent to 22.4 percent of the authorized ceiling of 126,000 for all Navy drill pay reserve personnel fixed by CNO. These personnel are susceptible to further breakdown on the basis of units with assigned aircraft and units without assigned aircraft. A complete personnel breakdown for the Selected Reserve units is shown in Table II.

At the present time there are approximately 3,500 officers and 15,000 enlisted personnel in the flying units. These personnel are organized into the squadrons shown in Table II. It should be noted at this point that the additional 40 Marine squadrons previously noted are utilizing the same aircraft, attack, fighter and helicopter as their naval counterparts but on alternate week-ends. The Navy attack and fighter squadrons are essentially the same size as the regular squadrons. The other squadrons for reasons of training compatibility are about one-third of the equivalent regular type.

TABLE II

SELECTED AIR RESERVE UNITS

Type of Unit	Number of Units	Personnel on Board*		Funds Allocated (\$000)	
		Officer	Enlisted	Fiscal 1965	Res. Pers. Navy Approp.
VF (Fighter)	16	365	1,040	1,271	
VA (Light Attack)	13	453	887	1,148	
VS (Carrier ASW)	39	954	2,762	3,062	
HS (Helicopter ASW)	30	435	1,111	1,353	
VP (Patrol ASW)	65	1,291	6,419	6,242	
VP (Tactical Support)	57	1,024	2,420	2,890	
NARMU	27	221	1,041	854	
Air Wing Staff	18	1,037	2,966	2,948	
NAIRU	22	692	172	1,138	
NARDIV	4	39	345	321	
WEPTU	51	662	10	1,080	

* Data current as of June 1964.

The training of these squadron personnel plus basic rate training and aircraft maintenance utilize the vast majority of the direct man hours¹ available from the active duty support personnel. Pilot training as previously mentioned is not always up-to-date in all areas but in general is good. One measure of this is that the accident rate in the reserves is the lowest of any Navy command. Minimum average flight hours in the VS and VP squadrons are 172 per year. Enlisted training at the basic levels is generally good and is supplemented by extended periods of Summer Active Duty in various service schools and in the Fleet.

It is in the area of advanced training that the system begins to break down and for a variety of reasons. The first is the non-availability of sufficient TAR enlisted instructor personnel trained in advanced technical

areas. This situation is aggravated at this time, fiscal years 1964 to 1966, due to the large numbers of World War II personnel retiring. At the present time First Class and Chief Petty Officers are retiring faster than they can be replaced through normal advancements. This problem of decreasing experience level is being combated by sending as many of the remaining personnel as possible to advanced schooling. The second obvious difficulty is generic to the overall situation. That is the basic problem of classroom instruction itself. It is difficult to hold the attention of the trainee even with the best equipment, instructors and techniques. The relatively short weekend duty period, much of which is taken up with administrative functions is too short to develop the "learning situation." To implement its training program the Reserve Command is the Navy's largest holder of training devices; over 7,000. Although their devices yield excellent results with pilots and certain air crew categories many groups do not obtain anything near optimum benefit because of the lack of practical work available in their specialized areas. This area of the problem is extremely basic, it has existed since the beginning of the program and will continue into the foreseeable future.

Simply stated the problem revolves about the fact that a limited amount of aircraft and related equipment (and much of this obsolete) is available to the reserves. Coupled with it is the fact that in any flying organization one of the major if not the criteria for efficiency is the percent of up-aircraft that are in a flight status at 0800 on any operating

day. The reserve is no exception to this practice and so the natural tendency is for the active duty personnel to spend the week readying a maximum number of aircraft for flight operations on the weekend. The direct result of this practically universal system is to severely reduce the opportunity for much of the enlisted technical training. Instead the emphasis is placed on adequate training for pilots and a limited number of aircrew personnel. If an engine or aircraft check or electronic equipment repair can possibly be completed for weekend operations it will be done.² All levels of the organization would be criticised if it were not so. It is difficult to say whether or not this is the proper approach for the long run and if mobilization capability is being hindered or helped by such a policy. Without question though the training of many of the enlisted reservists does suffer as does interest and thereby retention as is evidenced by the low re-enlistment rates in this area once obligated service is completed.³ This general problem will be discussed as part of the overall context in later sections of this paper.

The total reserve fleet of active aircraft consists of 805 aircraft. This number has decreased in recent years as has the regular inventory. It was 852 in 1963 and 923 in 1962 and 2,023 in 1951. At the present time this is slightly less than ten percent of the present total Navy Inventory of 8,380 Active Aircraft which includes 1,470 "pipeline" aircraft. The high ratio of Reserve to total HTA inventory occurred in 1951 with fifteen percent of the total in the Reserve stable. Included in the reserve fleet

are a wide variety of models ranging from the modern jet powered supersonic F-8 Crusaders to the venerable 22 year old (R5D) C-54, transports plus a miscellany of general purpose types.

As will be discussed later note should be made that when a squadron is called to active duty its aircraft go with it. Therefore those individuals who are not attached to the activated squadrons can not maintain flying and training proficiency if they are not called to active duty. During this period the raison d'etre so to speak for the companion squadrons as a unit has ceased to exist. The individuals in these units then must be used to augment units with aircraft or regular Navy units. There was a general deterioration of the recruiting and retention problem that occurred during the 1961-1963 Berlin Crisis and was attributed in a large part to this condition.⁴

The primary responsibility for and the purpose behind this phase of the Selected Reserve Program is to provide the aircraft and personnel to field and support 40 Fleet sized air squadrons of all types; light attack and fighter, maritime air and carrier based ASW squadrons and a transport capability to lift reserve forces and equipment and support the increased MATS wartime load.

Approximately half of the aircraft inventory is involved in the ASW effort at the present time. All of this effort is land based. "While it is desirable to have reserve pilots qualified in carrier landings, such practice has proved to be a detriment to overall readiness."⁵ It has

been estimated that a 30 day period would be sufficient to re-qualify in this area. It is of interest to note that the transport arm, the VR squadrons, as a group operating with an average of 50 aircraft are 10th in size among free world airlines and 28th in total passengers carried. This position is achieved as a result of their function in air-lifting many of the reserve personnel to and from their week-end drills. However, this portion of their mission accounts for only one-third of their flight time.

The non-flying aviation supporting units shown in Table II number approximately 3,000 officers and 4,500 enlisted men at this time. The emphasis in this area has been the maintenance of skills primarily through group efforts but for the ultimate purpose of providing scarce manpower on an individual basis to augment critical areas during any mobilization period. The assigned missions for each of the groups are as follows:

1. NARDIVs (Naval Air Reserve Divisions) train the ships company personnel that will bring the attack and ASW carriers, seaplane tenders and helicopter assault ships to their wartime complement in aviation rates.
2. NAIRUs (Naval Air Intelligence Reserve Units) staff the intelligence billets of staffs, ships squadrons and the Navy Department.
3. Air Wing Staffs are charged with the task of training hundreds of non-aviation support personnel; the hospitalmen and flight surgeons, storekeepers and supply officers, aerographers and meteorologists, and others required to put aircraft in the air, safely and with operational efficiency. During mobilization they will also provide officers and

enlisted men to augment the Atlantic and Pacific ASW Operational Control Centers.

4. NARMUs (Naval Air Reserve Maintenance Units) will form the crews at the war expanded Naval Air Stations which will service the shore based Fleet.

5. WEPTUs (Bureau of Naval Weapons Training Units) will provide officer specialists to fill billets in the Bureau of Naval Weapons and its field activities.

At the present time the NAIRUs and WEPTUs are actively engaged in providing finished studies in their particular areas and have repaid their operating costs many times over in direct savings to the Regular Forces and the Navy as a whole.

Training in the Support groups does not present the severe problems encountered by the flying units. There are several reasons for this. First, these units are generally, with the exception of the NARMUs, practically independent of flying equipment and other expensive training devices. Second, the majority of the individuals in these units perform their annual training duty as individuals. Sometimes at the billet to which they have been given mobilization orders, sometimes at miscellaneous installations of their choice that pertain to their speciality and sometimes as in the case of the Air Wing Staff with one of the reserve squadrons on its annual deployment. From this continuing intimate contact with the operating forces a valuable store of up-to-date information and

experience is brought back to the reserve units. Some of the WEPTUs and NAIRUs require each officer to report to the entire unit on the results of their active duty tour. All of these elements combine to make many of these supporting units quite effective in terms of both present and future capabilities and also from the monetary standpoint as will be commented on.

The physical plant of the twelve Reserve Stations has a current plant account value of \$212,000,000. A realistic estimate of replacement costs is \$620,000,000. These values do not include the six Naval Air Reserve Training Units since they are tenant activities at Regular stations. Military Construction Funds expended on these bases totaled \$2,159,000 in fiscal year 1965 down from an average of \$3,000,000 per year for the past five years. To give some idea of the relative position of the reserve component with respect to the regular in this area, the estimated replacement value of the total Navy Plant Account is \$22,000,000,000.⁶ Total Military Construction Funds for fiscal year 1964 were \$354,000,000. This means that on an overall basis for every \$100 of Class I & II Plant Account Value in the Navy today \$1.60 is being spent yearly for new construction and upgrading of facilities. In the reserve area the same figure comes to \$.35 per \$100. As can be seen the reserve modernization program is proceeding quite slowly at present. If the reserve facilities were up-to-date this would not be a significant aspect but unfortunately the reserve bases are typified by five-year

structures, that are twenty years old. Specific comment was made on this point by the Chief of Naval Air Reserve Training to the Navy Inspector General in 1962.⁷

"Military construction funds have not been available to permit an orderly replacement program of these aging facilities. Repair and improvement funds have not been adequate to carry on major maintenance and structural repairs to sustain these aging facilities in accordance with minimum Naval standards. Operating funds for minor repairs have also been grossly inadequate because of increases in certain fixed costs which these funds must also cover, such as: civilian pay, utilities, and miscellaneous essential operating expenses. The net effect of these deficiencies is to make it difficult, if not impossible, to fulfill the mission of the Command."

Besides the basic problem of inadequate facilities such as barracks, dispensaries and utilities, a secondary problem arises in the training areas where the situation is aggravated by the lack of trained personnel and equipment in many technical areas as has been previously mentioned. The solution of sending as many men as possible to regular service schools and on extended active duty, has not been entirely satisfactory. These people are entirely lost to the reserve program during this period. Other problems arise with school quotas and schedules at regular schools and the compatibility of regular with reserve equipment. From the standpoint of the reserve command the ideal solution would be adequate facilities and equipment available within the command. This has been difficult to justify or obtain approval for in the face of the increasing requirements of the operating forces as can be seen by the size of the appropriation previously noted.

The total fiscal year 1965 appropriation for Reserve and Guard forces in the Navy, Program V of the Five-Year Force Structure was \$396,000,000. Of this amount \$95,200,000 was set aside for the Marine Reserve Program leaving \$300,800,00 for the Naval Reserve. The aviation programs expended approximately 46 percent of this; \$139,034,000, broken down by appropriation as shown in Table III.

TABLE III

FISCAL YEAR 1965 EXPENDITURES

Appropriation Title

Military Personnel	Station & NARTU payroll	\$42,642,000
Navy	CNARESTRA payroll	1,173,000
Reserve Personnel	Flying Squadrons payroll	15,966,000
Navy	Supporting Units payroll	6,041,000
	Annual Active Duty for non-associated individuals (8,000 officers, 500 enlisted)	3,900,000
Operation & Maintenance	Aircraft; Flying, o'haul & maint.	34,892,000*
Navy	Station and NARTU upkeep	14,123,000
	CNARESTRA upkeep	738,000
Procurement of A/C and Missiles	command wide	11,100,000
Other Procurement	Weapons, A/C and Support	6,300,000
Military Construction	Various Station Projects	2,159,000

* Adjusted for Marine Usage

Approximately 80 percent \$112,000,000 of the money spent in the Navy aviation program was spent directly or indirectly on the Naval

Selected Air Reserve Squadrons. Almost 85 percent of this subtotal is spent by or for the flying squadrons. Based on the personnel data of Table II and the cost breakdown of Table IV it can be further shown that the total cost per man in the flying squadrons is two and one half times that of the support squadrons which is not unexpected because of the high equipment cost.

For the purpose of more accurate analysis this total sum is broken down to Total Flying and Support Squadron Costs in Table IV.

TABLE IV

TOTAL FLYING AND SUPPORT SQUADRON COSTS*

I	Flying Squadrons:	
	A. Direct Personnel Costs	\$15,800,000
	B. Aircraft & Allied Equipment Costs	28,700,000
	C. Procurement, A/C and other	17,000,000
	D. Support Costs	
	1. Personnel, Station and CNARESTRA	22,300,000
	2. Station Upkeep and miscellaneous	<u>11,200,000</u>
		\$95,000,000
II	Support Squadrons	
	A. Direct Personnel Costs	6,000,000
	B. Aircraft & Allied Equipment Costs	900,000
	C. Procurement, A/C and other	700,000
	D. Support Costs Station and CNARESTRA	
	1. Personnel	7,400,000
	2. Station Upkeep and miscellaneous	<u>1,000,000</u>
		\$17,000,000

* These figures have been corrected for the concurrent use by the Marine Air Reserve of facilities and aircraft.

NOTES

1. This excludes the recruiting, administrative, security, public works and such functions not directly utilized by the inactive personnel ~~training~~ and operating functions.
2. In many cases TAR personnel will work overtime on operations of this sort and then be given extra time off on the weekends when they should be available for instruction duties.
3. At present overall attrition is 40 to 45 percent.
4. Unfortunately the other reason for poor retention was the fact that many reservists simply did not want to fulfill their active duty obligation. However, this cannot truly be said to be a problem of the reserve as such. It is more concerned with the national moral character and as such will not be commented on further in this paper.
5. Julian Becton, "The Naval Reserve Today, " Naval Review 1964, February 1965.
6. Office of the Chief of Naval Operations, Facilities Projects Manual, OPNAV INST P11010.20, 8 October 1962.
7. Chief of Naval Air Reserve Training, Letter to Navy Inspector General, Code 01:mr, 7 September 1962.

CHAPTER V

MILITARY ECONOMIC BACKGROUND

As previously noted the original purpose of the reserve forces was to augment the regulars in time of war. And as also stated that purpose is basically the same today. However, the type of war with which we are faced today and in the foreseeable future has changed radically since the Naval Air Reserve as it is presently constituted was commissioned. The primary question that this situation poses is this: is the change sufficient in itself or in combination with other factors to seriously affect either the requirements for certain Reserve Forces capabilities or the possibility of successful performance of these same capabilities. To answer this question we must first determine just how much war has changed with respect to requirements and costs. Then we will determine the types of situations with which we will be most probably faced. And finally we will attempt a more detailed view of the cost implications in the most probable type of engagement for the particular type of forces with which we are concerned.

A number of authors¹ writing in the economic and general humanities fields in addition to the military sponsors of United States long range war plans have recognized the changing nature of modern war. The fact of Nuclear weapons, the means of delivery, the impossibility of defense and finally the inability to assure against retaliation form the new weapons base in this changed concept of war. Superimposed on the

weapons aspect are the high costs of these and the various complementary systems necessary to produce a balanced total force. Aside from the technical aspects this problem of a balanced force structure has been the primary problem facing the present Secretary of Defense during his time in office. However, we will not concern ourselves particularly with the total force structure or cost of the entire establishment in the United States which currently stands at approximately 50 billion per year. Neither will the research and development aspects be discussed. This latter aspect could also be viewed from the standpoint of its insatiable use of highly skilled manpower and brains that could be so very profitably employed in other areas. This topic alone could be the subject of several other papers and will not be considered further at this time. Other equally interesting diversions could be created by discussing the cost of the modern foot soldiers' equipment or the tragically high ratio of man support necessary to keep him in the field.

At the risk of sub-optimizing we will continue to look at only the cost of the Naval aviation and allied systems and those systems that may be substituted for it since this is the primary purpose of this paper. These other cost considerations while relevant are not primary to the type and magnitude of situations that concern the overall mission of this group of forces.

The rising costs of these forces is best reflected in actual aircraft procurement costs as shown in Table V. However, it should be remem-

bered that individual aircraft are many times larger and more efficient² than in days past which is one of the primary reasons for the gradual reduction in total aircraft numbers that have been occurring in recent years.

Accident costs at the present time, are averaging slightly over \$500,000 per incident and between five and seven million dollars per week for all commands. The reserves are somewhat lower than this due to their use of older aircraft and a lower accident rate than the regular commands. This average will escalate at a rapid rate however, as wartime operations are enjoined even in a "limited" situation such as Viet Nam where a recent incident at a United States controlled air field cost 27 lives and over 50 million dollars in aircraft.

TABLE V³

NAVAL AIRCRAFT COSTS

Year	Average Cost per Airplane	Average Cost per Pound
'41	60,000	10
'51	467,000	32.9
'55	868,000	22.52
'60	1,745,000	120.89
'65 (est)	1,840,000	125.00

By using less than 200 missiles the two major powers have at the present time the capability of reducing their opponent to the status of a third rate power or less in approximately 30 minutes from the time the button is pushed.⁴ In return they must expect the same treatment as

similar forces are released towards them. Each side has such a widely spaced, effectively invulnerable means of delivery that successful retaliation must be accepted as a fact. Next in importance to the strategic nuclear weapons are the tactical sized nuclear weapons. The immense power of these weapons would force opponents in a full scale war situation to eliminate the massed firepower concepts of attack so popular in World War II. At the present time, only two powers, United States and the USSR are capable of weapon delivery in this area while three others have moved into the area of nuclear capabilities, if not delivery. Before too many years certainly the level and range of nations with these capabilities will be increased many times. This is a universal fact of technological progress as the late starters are spared the expensive and time consuming mistakes of the leaders.

Other weapons developments, less overt perhaps but extremely real at this time are those concerned with poison gasses, man made plagues and crop destroying agents. What is particularly disturbing about this range of weapons is that many of them can be released on a completely covert basis. Results range from nuisance value to probable 100 percent kill and can be spread over a wide time spectrum. Effects can be slow in effect so as to be noticeable only in succeeding generations or may be so rapid as to produce death or complete paralysis in less than 10 minutes.

These developments in weapons and costs have profoundly influenced the types of wars that will in all probability be fought in the foreseeable

future. The general consensus appears to be that there are three possible types that could occur at the present time.

The most serious of these would be the all out nuclear conflict. Fortunately, as all nations become more aware of the disastrous consequences that would accrue to all participants in such a conflict the probability of occurrence is becoming smaller each year. This appears to be especially true in recent years as the size and capability of allied conventional forces have increased and subsequently reduced reliance on the "all or nothing" nuclear strategy. This is not to say that a deterrent must not be maintained or new developments explored to avoid being completely "one upped" by the opposition through technological breakthrough or accidental release. Over one-third of all United States defense dollars are presently being spent for this purpose. Examination of the force structure of all major powers indicates the same reasoning is being applied to both the probability of use and the maintenance of a deterrence in the area of the "chemical and biological" weapons.

Considerable thought has been been given to the possibility of gradual escalation to this all out type of war from a limited engagement.⁵ Recent history seems to run counter to this possibility though as the principal protagonists have shown themselves increasingly unwilling to meet each other directly. They have accepted extremely frustrating decisions and incidents that would have provoked major conflicts in

years past. To further forestall this possibility the United States has increased its conventional capabilities many times over, as previously noted, to provide "an increased number of options" in the words of Mr. McNamara.

A second type of war situation commonly mentioned is that involving a proplonged mobilization period. Within this type we would have time to expand our training, increase material stock piles and perform all the other economic-military actions previously engaged in by nations during the normal build up for war in the past. What the majority of these writers fail to recognize however is that the United States has been in this position since 1950. Although not always actively exchanging gunfire on several fronts as in recent months our mobilization, training and expenditure levels have been in excess both dollar wise and percentage wise of many previous "war time" periods. The majority of this type of expenditure however, is ammendable to fairly accurate planning over an extended time period. The present Five-Year Force Structure and Financial Plan being the primary example.

The third type of war actually covers a wide variety of situations and in effect is best defined by its limited geographic nature. This is the "limited" war or "brushfire" engagement so familiar in recent years. Because of the factors previously noted this will in all probability be the most common type of conflict for some time to come. Unfortunately this type of conflict which can assume a wide range of sizes and forms

does not lend itself readily to planning and in fact has a way of erupting quite unexpectedly as did the recent Dominican crisis.⁶ These situations are generally not subject to the use of even tactical nuclear weapons at this time and what is even more disconcerting to a country with large inventories of expensive weapons; war is often conducted with extremely primitive weapons. Perhaps the prime example of this was the armed overthrow in Cuba, by rebels without air support or weapons larger than a few 50mm cannons, of a firmly entrenched force.⁷ This is not to say that expensive weapons or at least large amounts of material are not required or at least helpful in subduing guerilla insurrection. As a rule of thumb a ten to one superiority of forces is claimed necessary to completely overcome a dedicated guerilla force in its home territory. These operations can become both time consuming and costly and it would appear that in a long drawn out war of attrition the advantages normally accruing to the larger better equipped forces are somewhat reduced in effectiveness.. Many such enemy actions have required extensive countermeasures on our part. When combined with statements such as Premier Khrushchev's United Nations "Wars of Liberation" speech of 1961 the evidence would indicate our opponents would hopefully have us spend ourselves into defeat. While it is true that from the military and political viewpoints these operations may have to be considered as less than a complete success the same is not true from the economic viewpoint. As long as the economy of the country is producing at less than maximum

capacity due to either unemployment of labor or underutilization of capital equipment munitions expenditures will act as a continued stimulus. This is due to both the direct effects in the primary supplying industries and also the secondary or multiplier effects through the various "backup" levels as wages are spent, capital equipment purchased and raw materials consumed.

Based on time span the limited action generally falls into one of two categories. The first or short term type is perhaps best typified by the Berlin Crisis of 1961 where no forces were actually engaged and the "crisis" in effect evaporated as soon as we showed our determination and apparent ability to react. A second example of this type was the "Cuban Missile Crisis" of 1962. Once again the reaction was swift although the means used to effect the reaction was a combination of rapid deployment of Regular Forces and "Timely Television Appearances" by the President and Secretary of Defense rather than a recall of Reserve Forces. One of the primary reasons for this difference in treatment was the increased number of "options" available in conventional forces at this time with respect to early 1961 as previously noted. This point will be elaborated upon in later paragraphs.

The second category naturally is the long term engagement. Although it may be precipitated suddenly the over-all character is one of constant buildup to some higher level after the initial contact period and a continued action of sufficient duration to permit orderly rotation of forces.

Viet Nam, Korea and perhaps the Dominican Republic action will fit within this category. It is worthy of note at this point that Reserve Forces were utilized in only one of these actions. Since that time however, the general makeup of the Regular Forces has undergone and is undergoing drastic revision as will be noted.

With respect to the employment of ground based aviation forces these limited engagements often pose definite restrictions. In many cases land based units have difficulty in deploying efficiently due to the physical consideration of the base itself such as runway characteristics and maintenance facilities. In all cases logistic support since it must usually start from a very low level is quite expensive. Political considerations are often involved since the occupation and modification of real estate by United States Forces may not be advantageous to the friendly indigenous factions for a variety of reasons. In any case the difficulty involved in security operations and the always present probability of catastrophic losses due to reverses to the land forces must be allowed for. When the foregoing is considered and superimposed on the actual requirements for these types of conflicts, Naval Forces afloat seem to be the logical answer. Carrier airpower can be employed without involving third parties or involving treaties, agreements or overflight rights. This is not to say that catastrophic losses could not occur in this area also. However, within the foreseeable future and considering the capabilities of the probable protagonists it appears that the risk of losses involved is

outweighed by the advantages of employment of some level of aviation forces afloat. In certain areas these may be the only aviation forces that may be brought to bear for the reasons noted above. For these situations the risk and cost however high will have to be assumed.

The foregoing has attempted to give an overall picture of the present Military-Economic situation with respect to the types of wars, strategic situation and some of their cost implications for the particular type of forces with which we are concerned.

In brief, as a nation, we are concerned with meeting the requirements imposed by a series of long and short term limited type engagements while maintaining a sizeable deterrent and current capability in the area of nuclear warfare. Capabilities in both these areas have increased substantially since 1961 when Secretary McNamara assumed office. As noted continuing emphasis is being maintained on a build up, especially in the regular forces to be able to meet adequately any possible requirement.

NOTES

1. See Hitch and McKean, The Economics of Defense in the Nuclear Age (Cambridge: Harvard University Press, 1963) and Dennis Gabor, Inventing the Future. (1st American Edit. N.Y. Knopf, 1964)

2. In Korea, during 1951, a greater total bomb weight was dropped than all of World War II. This is partially due to aircraft capabilities were one pilot in an AD2 could carry more weight on a longer mission than a B-17 Flying Fortress.

3. C. O. Holmquist, "Modern Naval Aviation", United States Naval Review, 1962-1963. February 1964.

4. Hitch and McKean, op. cit., p. 10.

5. W. W. Kaufman, The McNamara Strategy, (New York: Harper and Row, 1964), pp. 90-105.

6. Actually the administration was quite aware of the upcoming crisis, what was unexpected was the rapid apparent involvement of the communists and the bloody character it assumed.

7. Other recent examples of these include the shields used by United Nations troops in the Congo to protect themselves against tribesmens stones, spears and arrows, Helicopters in Viet Nam returning with arrows in them, the bamboo stakes of the Viet Cong and the Molotov cocktails of the Budapest Freedom Fighters.

CHAPTER VI

REQUIREMENTS

Where then should the Selected Naval Reserve Fit within the picture painted in the previous paragraphs? This depends naturally on the interaction of two closely interwoven factors; capabilities and requirements. In the following section the requirements of the present and foreseeable future will be discussed.

The Fiscal Year 1965 Joint Staff Combat Plan (JSCP) sets up the following possible requirements for what would be considered combat employment of reserve forces. This would be during a Cold War (including Limited Warfare Conflicts) when they would:

1. Augment active forces in contingencies requiring rapid but limited mobilization.
2. Reinforce active forces for protracted combat.
3. Augment or replenish combat ready forces in continental United States.
4. Provide an expanded base for long scale mobilization.
5. Assist in recovery and reconstruction measures.

However, at the present time there are no Naval Reserve Forces of any type that are committed to specific contingency plans.¹

If full mobilization occurred all of the selected air reserve squadrons and their aircraft would be called to active duty during first phase along with the various support squadrons. As previously noted the flying units

would form 40 regular sized squadrons and then supply additional personnel to augment active squadrons and various fleet and shore support activities. Personnel of the supporting units with the exception of the NARMUs would report as individuals to pre-assigned mobilization billets. Table VI shows planned first phase personnel requirements.

TABLE VI

MOBILIZATION SCHEDULE (PERSONNEL REQUIRED) FOR AUGMENTING

Support Squadrons			Aircraft Squadrons		
Unit	Officer	Enlisted	Unit	Officer	Enlisted
NARMU	220	1, 097	VP	1, 004	4, 900
NARDIV	40	352	VS	187	581
NAIRU	713	191	HS	142	600
AWS	1, 054	3, 543	VA(J)	16	104
WEPTU	674	10	VA(P)	4	28
			VR	106	587
			VF(J)	84	347
			VP	565	1, 645

These requirements concern full mobilization but could be modified for other situations when available active components were insufficient to meet obligations or when activation of a large group of reserves was desired to demonstrate a national solidarity or determination in a particular circumstance. This second cause for recall was exemplified by the 1961-1962 Berlin Crisis callup. However, a somewhat similar although faster breaking and perhaps even more urgent situation existed in Cuba in 1963 and no recall of Reserves was made at that time. ²

Partially for the reason previously noted a much larger conventional active duty force was available for deployment than had been available in 1961. What ever the background it would appear that the second reason in itself would not provide a valid basis for continuance of a large reserve force with the present regular capability unless of course the mere existence of such a force could act as a deterrent. Looking further back in the analysis it was stated that the possibility of a large scale general or nuclear conflict compared to a series of individual or a number of simultaneous "limited" war situations is quite small. This leaves only the general requirement for a reserve force in being to supplement inadequate regular forces when required for these various limited war operations.

Moving from the general to the specific it must be determined which requirements apply to the Selected Naval Air Reserve. In order to provide a more complete answer the program is best divided between the aviation squadrons (plus the NARMUS) and the various support units, NAIRU, WEPTU etc. since they perform different functions. Considering the aviation squadrons first it would appear that they could possibly be employable at some level in all of the possible uses stated in the Fiscal Year 1965 JSCP. Each of these possibilities will be discussed separately.

The first JSCP requirement, "Augmentation of active forces in contingencies requiring rapid but limited mobilization" could occur in three separate geographic settings, each posing separate problems and

probabilities. The first and most likely would require overseas deployment in areas outside the operating range of Reserve Aircraft, from a United States base. If seaborne forces were to be utilized the operating squadrons would require a recent carrier qualification which they do not have. Under optimum conditions approximately 30 days would be required to attain this proficiency. As previously noted, if land operations were entailed the size of the contingent that could operate would in most cases be severely restricted size wise and in any case would normally fall within the province of the Air Force or Marine Aviation. These circumstances which will in all probability remain unchanged in the future would effectively eliminate this particular facet of the first requirement with respect to the flying squadrons.

The second setting less likely but entirely feasible would be that requiring rapid overseas deployment in an area within operating range of United States facilities. The feasibility of response to this particular type of requirement would only be limited by ability of the reserves to maintain themselves in a deployed state. This in turn would depend partially on the abilities of the tactical support VR squadrons and the reserves compatibility with regular equipment.

The third setting would include operations from the continental United States. This requirement is discussed more generally with respect to the third general requirement of the JSCP in a following paragraph.

The second JSCEP requirement, "reinforcement of active forces for

protracted combat" appears to be a valid requirement for the reserve forces if the active forces are over extended in terms of available equipment and manpower. This would be due to a large increase in the number of active fronts or an increase in combat attrition beyond the replacement capabilities of the active forces. Circumstances such as these would not normally occur overnight for the primary reason that there is a build in elasticity to the existing forces especially since 1962 that did not exist for instance, in 1950 in Korea. Active Naval Aviation Forces at present are larger³ and of sufficient size to overcome all but extremely severe attrition losses.⁴ In addition they are better equipped and possess greater individual capability as a squadron or an Air Group and in general maintain themselves at a higher state of readiness although this is perhaps of nebulous value for discussion. From the practical standpoint, adding a Reserve Air Group to the active forces would entail de-moth balling and shaking down one or two carriers which in itself is a formidable and time consuming task. Secondary reasons favoring this slow build up view point would include the increased use of multi-nation forces and the fact that the lines of responsibility or interest have been drawn more closely in recent years, which tends to reduce the chance of surprise major engagements. Opposed to this of course is the apparently increasing number of actual and potential trouble spots and the increasing potential of the enemy bloc, Red China in particular.

The third use of Reserves, "augmenting combat ready forces in continental United States" would seem to be merely an extension of the previous case except that the requirement for immediate carrier qualification or additional ships has been removed. This means the response time could be quicker and tactical support considerably simpler since many units could deploy at their own home station. The present emphasis on ASW duties (necessarily land based at present) utilizes half the reserve aircraft and is ideally suited to this task. In addition the tactical support VR squadrons would be working in completely familiar territory. In effect this was the situation that existed during the Berlin Crisis in 1961-1962. It must be reiterated at this point though that this is primarily a defensive tool whose use presupposes attack or imminent danger to continental United States Installations, a situation not likely to occur during limited war.

When considering the Selected Reserve Aircraft Squadrons for the fourth use, as "an expanded base for long scale mobilization", careful note should be made of the increasing disparity between fleet and reserve equipment. It is true that there will undoubtedly be valid missions for the reserves as they are presently equipped for some time to come. This is despite the fact that in many areas they will not be able to perform because of superior capabilities of enemy forces with more modern aircraft and armament. However, their value as an expanded base will definitely decrease with time due to increasing support costs unless the reserve

equipment is continuously updated and made more compatible with regular systems than they have been in the past.

Finally it would appear that definite use could be made of the VR and perhaps VP squadrons in recovery and reconstruction measures. However, this would normally imply a cessation of hostilities and an extended time period during which regular forces if at all available would normally be emphasized depending of course on availability and previous attrition losses. So while entirely feasible this particular use does not seem too probable.

Although the support units and the flying units would probably be recalled simultaneously in a major mobilization they would as previously noted perform different functions. That is because all the individuals involved in this area would be recalled on an individual basis and no equipment, only individual skills, are involved. It would appear that any of the uses cited by the Fiscal Year 1965 JSCP could be fulfilled by various individuals in the supporting units. The level of recall would depend naturally on the specific requirements imposed by a particular situation and the number of individuals available for assignment.

In summary then the present and foreseeable realistic requirements for the Selected Naval Air Reserve cover two separate spectra. The first, a rather restricted role for the flying squadrons would consist primarily of the requirement to reinforce active forces for protracted combat when attrition losses become severe or commitments increase

considerably above the present level. Next, but of considerably lesser probability would be the requirement to augment in certain overseas contingencies within range of United States facilities. The other requirements such as the replenishment or augmentation of combat ready forces in the continental United States particularly in the ASW area or the provision of an expanded base for long scale mobilization seem considerably less probable for the reasons previously noted.

The role for the support groups is considerably less restricted since individuals, group or units could be recalled at any time to serve in specific pre-assigned mobilization billets.

The preceeding has been concerned primarily with various types of combat employments. There are many other requirements that do not fall within this area presently being fulfilled by various reserve forces. These would include the various secondary missions of CNARESTRA previously mentioned such as recruiting and assisting in regular operations plus other functions such as search and rescue, good will and naval promotion and at times disaster assistance. Close scrutiny of these functions however, shows that the active duty component not the Selected Air Reserve Units are responsible for all or a good part of these tasks in the majority of these areas. This aspect of the situation then will not have direct bearing on our analysis of the Selected Air Reserve, and at risk of further sub-optimizing will not be considered further.

NOTES

1. United States Navy, Office of the Chief of Naval Operations, OP-05R, Study of Naval Reserve Components, (U), 2 July 1964.
2. Two Air Force Reserve Wings were activated at this time but did not deploy and were released in a matter of a few days as the urgency of the situation abated.
3. In fiscal 1965 there were approximately 34,000 aviators on active duty in the Navy.
4. BuPers has stated that there is a shortage of over 2,000 junior aviators in Fiscal Year 1965 but this is based on peace time rotation policies.

CHAPTER VII

CAPABILITIES

Having considered the probable requirements for the Selected Naval Air Reserve the next area of attention should be its present and projected capabilities to perform these tasks adequately. Capabilities in any organization are probably best described as a function of personnel in terms of availability, training and experience plus available equipment to do the job and finally morale.

With respect to personnel levels the reserves are presently having problems in recruiting and retention in several areas. The first of these concerns aviators where onboard count has remained at approximately 90 percent of allowance for several years. In recent years the Navy output from the training command has been reduced from 2,400 to 1,100 aviators annually. In addition the active duty obligation has been increased from three to five years. The net result of these two factors is that very few aviators are being released to inactive duty. To meet requirements an increasing number of waivers extending the age limit for certain types of flying duty are being granted. Since 1962 the number of waivers granted exceeded the number of aviators released from active duty. One result of this general situation is that the average age in grade for all officers is increasing approximately six months per year. Unless this overall trend is reversed in the aviator area the remaining personnel will not be capable of efficiently manning their equipment.

In the ground officer area this particular situation is not quite as severe since the experience requirements are not subordinated to the physical requirements as in the case of the aviators. However, the command has been forced to grant a considerable number of waivers in this area also as increasing numbers of senior officers pass through the twenty year mark. For some time official policy would not allow waivers in this particular area. However, in recent years, after considerable pressure on Congress and DOD by the Reserve Officer Association and other organizations permission has been granted to allow waivers where there are vacancies in that particular officer's unit. By this means a large and valuable pool of experience has been retained and is available for possible recall. However, the problem of over age in grade and the advanced seniority of reserves with respect to regular counterparts that would occur upon mobilization remains. This is an extremely undesirable possibility in the thinking of many policy level officials. Unfortunately the waiver system is only a partial stop gap since these individuals will be forced out by law after completing 30 years satisfactory federal service or at age 62 which ever occurs first. And finally despite the increasing prevalence of waivers the onboard count for non aviator officers has remained below eighty percent of allowance since the late 1950's. This is due in part to an expansion of the program since that time as additional units have been created and also to the failure of sufficient numbers of recently released officers to affiliate.

At the enlisted level the problem of maintaining a manning level based on both numbers and skills is more severe than in the officer area. There are continuing shortages in critical rates such as electronics repairmen, radar man and other high skill rates. In recent years onboard count has remained below eighty percent of allowance overall. This however, is not the entire picture. There is a serious imbalance between petty officers and unrated men with an excess of unrated men. Attrition rates in the lower ranks are very high after the young enlistee serves his allotted time. He becomes draft exempt on the basis of one year in a selected reserve squadron, and two years of active duty and in most cases does not reaffiliate when released. If he is reaffiliated upon release from active duty existing laws call for a total service of eight years. Attrition rates for these men after their eight year tour exceeds seventy five percent.

This problem of low retention is certainly not peculiar to the Reserve forces. However, there are additional factors beyond those encountered by the regulars which are of concern primarily to reserves and some quite peculiar to the Naval Selected Air Reserve. While these items are not necessarily germane to reserve capability in itself, they do affect it and so will be noted here. Of first importance is that reserve duty is extra duty above and beyond a civilian occupation with the real possibility of a long enforced separation from the primary business of developing a civilian career or business. In many cases it is a real

sacrifice in a monetary sense especially for enlisted personnel who will be making far in excess of their reserve pay at positions with considerably more status than their role in the reserve. Even for personnel in lower level civilian jobs a weekend duty in lieu of overtime at their normal work will entail a net monetary loss. Superimposed on these factors is the requirement of a two week annual cruise away from home. In many cases leave without pay from the civilian job is involved or else vacation periods must be used. This does not make for happy family relations to say the least.

One major area of financial remuneration working towards increased retention in the regulars is severely weakened in the reserves. This is the matter of retirement. Not only is it low,¹ but it does not commence until the individual reaches age 62, assuming a prior minimum of 20 years of satisfactory federal service. This is a poor incentive for the young enlisted or officer who has to complete an additional 12 to 14 years before he becomes eligible to wait for retirement.

Finally the physical fact of affiliating has become more difficult since the closing of ten bases in the late 1950's. Although the Reserve Air Lift operated by the VR squadrons brings thousands of personnel to drill monthly the area coverage and therefore the available personnel have been severely reduced. Many otherwise willing individuals have been forced to disassociate due to the excessive commuting distances involved. So by virtue of all these factors the ultimate capability of the reserve is diminished due to the loss of experience and manpower represented by

these non-affiliated individuals.

In the area of training the problems involved are a reflection of those of the active duty contingent previously noted. The "learning situation" is difficult to induce in the weekend environment when so much of the time is involved with administrative detail, catching up and planning operations, for satisfactory training. All of this is especially difficult for the non veteran enlisted man. The overall time span for learning a particular skill is stretched far beyond normal limits unless he can attend special training periods when he may be free from school or between civilian jobs. Within the veteran area there is another large group of enlisted personnel in a similarly difficult but different situation. There are approximately 500 individuals in non aviation rates varying from butcher to boilermaker. These people are presently training in aviation rates but it is a slow process. If mobilized their value would be far below that normally accruing to the level at which they are rated.

The training problem is not as severe with officer personnel since they have had sufficient active duty in the vast majority of cases to have perfected their particular skills. For the pilots the major problems occur when aircraft types are changed. Actually this has not happened too often in recent years. The average pilot although older than his regular counterpart is a competent professional in the equipment he is presently utilizing.

The flying equipment of the Air Reserve covers a considerable range as previously noted. Transport equipment is old, not very efficient on

a cost per-ton-mile basis but it is adequate for the tactical support of reserve forces which is its primary mission. At their present level of experience and training the VR personnel are willing to operate in the European Theater but they are not willing to operate West of Hawaii.

In the area of ASW operations the reserves are flying aircraft phased out of regular fleet operations but which are nevertheless capable of performing their assigned mission if properly manned and operated. These aircraft and their attendant gear are admittedly not as efficient as present fleet equipment but during an increased tempo of operations would act as a substantial complement to fleet equipment.

The same general comment would be applied to the attack and fighter area. With the recent addition of the F-8+Crusader the reserve air arm has moved into the "1,000 mph class". Unfortunately there are not sufficient numbers of these aircraft for more than three bases. With the exception of the F6A Skyray, and the FJ-4B Furies the other Reserve fighter and attack aircraft are still being used in various models by fleet forces and have obvious capabilities in many areas of limited war. One problem in this area that cannot be ignored however, is the fact that the Marine Aviation Reserve lays equal claim to these same aircraft. The Marine mission is becoming increasingly divergent to that of the Navy and is presently devoted to direct support of ground forces. Depending on the type of requirements and their timing the Navy capability could very well be reduced to zero in this area if the aircraft were assigned to

recalled Marine squadrons.

The reserve aircraft stable as a whole despite the recent introduction of the new fighter aircraft and a few past World War II transports is falling further behind the fleet each year. The primary reason as previously noted is the rising cost per unit and the lowering level of available funds. The newer systems are increasingly complex, an unfortunate but real phenomenon, and there is more than reasonable doubt as to the reserves' ability to maintain these systems. The old problem of active duty personnel pre-empting maintenance chores to hold availability high is compounded as the required skill levels rise and new systems are introduced. The net result is a difficult dilemma. On the one side, valid missions may remain for the old equipment but it will not last forever and on the other side it may not be possible to perform the mission satisfactorily with new equipment due to maintenance problems. Added to this dilemma is the increasing difficulty in obtaining aircraft to perform both Marine and Navy missions adequately.

The support squadron manning problems are at least as severe as those of the flying units, due mainly perhaps to lack of glamour and flight pay. Personnel onboard counts in recent years have averaged approximately 70 percent of allowance. However, the training, experience level and equipment problems in the support squadrons are considerably less severe especially in the NAIRUs, Air Wing Staffs and WEPTUs. These facets have been commented on in previous paragraphs. Within

these squadrons much of the advanced training is provided by squadron officer personnel, rather than by active duty instructors as in the aircraft squadrons. Annual training duty is performed with or at regular squadrons or installations so that most personnel remain current with recent developments. As operating entities the WEPTUs and NAIRUs are presently producing finished studies for various Navy Department components in Engineering, Management, Production, Procurement, Maintenance, Intelligence and other allied fields. These particular capabilities would cease to be available during a mobilization period since the units disband and individuals are recalled to their particular mobilization billets.

When considering the morale of the Selected Naval Air Reserve two words are important. The first is selected and the second volunteer. All of the personnel involved are volunteers. Although attrition is high in the lower enlisted grades it is very low among upper grade enlisted and officer personnel. These people have been "selected" in the true sense of the word and in general are proud of their position in the defense structure. By reason of long acquaintance alone they have built up a high level of skill and confidence in their equipment. It must be remembered they are training year after year after year to perform relatively the same mission. There are a considerable number of trophies awarded for excellence in many different areas each year. Competition between the various units for these awards is always keen and is one sure indicator of morale. One common phrase heard is "we're old and slow but we're ready to go".

There are many reasons for continued affiliation for the individual reserve. These range from a modified form of draft dodging, through the desire for retirement benefits and to retain Navy association and the desire to fly or be around aircraft to pure patriotism. For the average individual his reasons are probably a thorough mix of several of these. The net result though is a high level of morale command wise which in itself does much to improve the capability of the Reserve to fulfill its assigned mission.

The prior paragraphs have covered in brief the majority of the facets of the situation that bear on capability. Admittedly no single aspect has been treated in depth but rather an attempt has been made to at least touch on all of what are considered the pertinent points. The emphasis has been on the problems that reduce the capability since the requirements or idealized missions were discussed in the previous chapter.

In summary then what are the apparent capabilities of the Selected Naval Air Reserve with respect to the probable requirements of Chapter V.? At the present time and in the near future based on present manning levels and a 95 percent effective personnel recall rate² the Reserves could supply at the most thirty fleet sized flying squadrons for full mobilization. Officer complement would average at least a grade higher than in fleet squadrons and would be several years older in grade than regular counterparts. Enlisted complement would be seriously lacking at the 3rd and 2nd class Petty Officer levels and in all highly technical rates. Approximately twenty percent active duty rated personnel, reserve or regular

would be required to insure adequate aircraft availability. These squadrons would be capable of operating within the continental limits of the United States from their home bases within 24 hours and at advanced bases within 48 to 72 hours. For the carrier aircraft type squadrons they would be able to qualify satisfactorily within 30 days of recall. Operations would be dependent in a large part however on the support capabilities of the VR squadrons and incompatibilities between reserve and regular equipment would severely limit capabilities in advanced areas or over an extended period during full mobilization.

All of the above presupposes that the Marine Air Reserve contingent have not previously pre-empted the fighter, attack and helicopter aircraft. Depending on the type and order of the mobilization requirements there is a definite possibility of this occurrence. Especially during a full mobilization some percentage of these aircraft would be allotted to the Marines. However since this is a non-estimable quantity at present and will not effect the various alternatives open to the Naval Selected Air Reserve it will not be discussed further. When and if such a situation did occur the personnel affected would still be available to augment active squadrons.

The equipment capabilities of the reserve squadrons would have to be rated considerably below that of operating fleet squadrons with respect to range, speed, carrying power and mission effectiveness. Although exact figures are not available a rough estimate would place them at an average effectiveness with respect to fleet squadrons of 60 percent to

70 percent.

Within the support squadrons there would be available at present approximately, 2,500 officers and 5,500 enlisted men for full mobilization. These figures are also based on existing manning levels and an effective personnel recall rate of 95 percent. NARDIV personnel would deploy to various carriers and tenders. WEPTU personnel would go to BuWeps and BuWeps Field Activities. The NAIRUs, and Air Wing Staffs would go to ships, squadrons, staffs, stations and OPNAV while the NARMUs would deploy with the reserve flying squadrons or to various fleet support centers. Due to their lack of equipment requirements the future capabilities of the support squadrons will not be diminished as severely as those of the flying squadrons. However, there is and will continue to be a general diminution of future capabilities of both flying and support squadrons with respect to personnel factors. Fewer number of veterans, both officer and enlisted, are affiliating in the organized reserve. The number of reserves on active duty is a small fraction of those during World War II or the Korean period and the average individual leaving active duty prior to retirement at the present time is doing so because he "wants out" not because he is being involuntarily released. Organized reserve duty offers little attraction to the vast majority of these individuals.

NOTES

1. For the average Reserve officer with five years active duty, his retirement pay would be approximately 40 percent to 45 percent of his regular counterpart based on 20 years service. For the enlisted man with two years active duty it would be 25 percent to 30 percent.

2. United States Navy, Office of the Chief of Naval Operations, OP-05R, Study of Naval Reserve Components, (U), 2 July 1964.

CHAPTER VIII

ALTERNATIVES

Basically there are four possible alternatives to the problem of optimum levels of reserve participation that could be considered in the light of the information developed thus far:

1. Assume that no part of the mission needs to be performed by reserve forces and eliminate the capability.

2. Assume that all or part of the mission should be performed by reserve forces and:

- (a) continue to maintain the existing forces at their present level.

- (b) decrease the size of the existing forces and simultaneously increase the size or capability of the active forces.

- (c) increase the size and capability of the reserve forces.

In effect the major portion of the discussion thus far has concerned the second alternative, maintaining the existing forces at their present level with respect to cost, composition and capability. The remaining three courses of action, either eliminating, increasing or decreasing the reserve force are our actual alternatives to this status quo. Are any of them feasible and what are the relative costs? In keeping with the previous portions of the discussion the flying squadrons and support squadrons will be considered separately.

With respect to the flying squadrons if we are to be realistic it must be admitted that the trend in recent years has been towards the last alternative, that is a decreased reserve capability with respect to numbers

of aircraft and personnel. This has been accompanied by an overall increased size and mobility in active contingents particularly since late 1961 of all the armed forces and increased emphasis on limited war combat capability. This build up has been especially emphasized in the Army Special Forces and Aviation Support Groups, greatly increased airlift capability in the Army and Air Force and by new airborne troop deployment techniques in the Marines. No significant change in Navy techniques have involved during this same period, however. The carrier based force has been considered more than adequate in the limited war situations. With the increased overall mobility and wider capabilities in the other armed forces the services of the carrier based force have declined in relative if not real value.

New equipment concepts that are expected to be available as hardware in the near future will alter the requirements, capability and make up of all these forces and in so doing will definitely affect the requirement for reserve forces. Two of these developments affecting the carrier force include the Marines SATS concept and the V-STOL aircraft developments.

The Marine SATS (Short Airfield for Tactical Support) concept is partially operational at present and utilizes a package airfield with built in catapult and arresting gear. It can be placed on practically any level 3,000 foot road or similar surface and operate with high performance carrier aircraft. This concept has been developed to reduce dependence on both prepared airfield sites and carriers. The resulting increase in

Marine mobility has the direct effect of requiring less naval air support which in turn reduces Naval Air Reserve requirements all other things remaining equal.

The second development mentioned, the Vertical or Short Takeoff or Landing Aircraft, is somewhat less advanced from an operational viewpoint. It has however, drawn considerably more attention than the Marine SATS package because of its wider application and further reaching ramifications. It is not inconceivable that these aircraft with their unique ability to operate from extremely small areas will completely revise the concept of the large super carrier task force. Mobility would increase by an order of magnitude. No operating area, land or sea, would be too remote or small and forces could be subdivided to any number without excessive increases in support costs. Once again based on holding present forces constant the reserve backup force requirement would be decreased.

Other developments somewhat further in the future promise even more interesting speculation as to the changing nature of naval aviation. Prominently included among these would be the amphibious ground effects machines which would perhaps be operated in conjunction with the V-STOL aircraft and also the high speed hydro ship and aqua plane ship which will operate in the 100 knot class and would be a highly effective ASW weapon.

This discussion of the near and not quite so near future has not been an idle departure from our original question as to feasible alternatives. The fact of the matter is, that this equipment is being developed and

procured to replace and supplement existing equipment. Our discussion in this area then should not be centered so much on whether or not these particular changes are feasible or economic but rather what will be their effect on the Naval Selected Air Reserve. Without question the primary effect as stated is to reduce the overall requirement for the flying squadrons. And unless some of this advanced equipment filters down to the reserve level, which does not appear likely in the light of present policies, the disparity between reserve and regular capabilities and compatibility will increase beyond present limits with the net effect of further restricting the reserve mission.

In effect then the portion of this first alternative that remains open to comment or recommendation is to determine by what amount this component of the reserve force shall be decreased. This naturally would depend on an evaluation of the increased capabilities of the regular forces with respect to calculated present and future requirements.

The second alternative, to increase the size and capability of the Reserves does not appear to be economically feasible from the standpoint of either personnel or equipment. As previously discussed the reserves are below authorized personnel levels at present and the problem will become worse in the future with respect to both numbers and individual capabilities. With this background increased amounts of equipment alone will not improve capability. However, different equipment if not excessively complicated could improve existing capability. Unfortunately the trend

in existing fleet equipment, which is the only equipment available to the reserves, is continuously tending to increased complexity. Unless this trend is definitely reversed only minor increases in reserve capability with respect to existing requirements seem feasible and then only for the near future.

The remaining possible alternative, eliminating the reserve capability is undoubtedly the most clear cut albeit drastic of the possible decisions. At the present time considering the unsettled military-economic situations and the existing capability of the active duty forces the cost of their providing similar capability on a full time basis does not appear economically justified. Going back to our earlier figures of 30 fleet sized squadrons at 65 percent effectiveness the additional aircraft procurement alone for equivalent effectiveness would be in excess of \$500,000,000.¹ Total direct operating costs, upkeep and personnel could reasonably be expected to at least double this figure in a five year period. Indirect support costs would at least equal direct support costs. This would yield a figure in excess of \$300,000,000 per year over the expected five year life of the weapon systems based on Fiscal year 1965 costs.

This figure does not compare too favorably with the \$95,000,000 annual cost of the equivalent reserve system. One basic assumption inherent in this alternative is that it would be possible to recruit and retain the approximately 15 percent additional active duty aviation personnel to maintain this increased capability. The fact of the matter is that

many of the same personnel problems faced by the reserves are found within the regular structure. Definite shortages exist at this time throughout Naval Aviation and recently the Navy was forced to lower mental requirements for enlistees in an attempt to maintain quotas. Therefore there is no guarantee of success but more probably a serious question whether this increased level could be maintained without a general mobilization or at least including the Navy in the draft.

The alternatives facing the support squadrons with respect to their future employment are similar to those of the flying squadrons but the relative feasibilities appear to vary considerably. The basic symptom if not cause behind this view is that the absolute strength levels, both allowance and onboard count has increased slightly in this area in recent years while the flying squadrons have been decreasing. Air Wing Staffs have increased in size and in mission scope since their assignment to augment the Atlantic and Pacific ASW Operational Control Centers in 1962.

Similarly the NAIRUs and WEPTUs have increased slightly in size and their programs have been modified so that one of their primary duties as an organization is to provide finished studies to the regular forces. In this way they are acting as part time consultants. Establishment of the NARDIVs in the early 1960s in areas where no Air Station is accessible has tapped a definite source of personnel that can be trained in the basic aviation rates. Their use of existing surface facilities has held costs

to a minimum.

Reduction of these capabilities within the reserve forces does not appear feasible at this time as long as additional requirements continue to be imposed. Complete elimination and subsequent assumption of the mission by the active forces elicits the same logic that was applied to the flying squadrons. If feasible missions exist but there is no definite requirement in the light of the existing military situation that the capability be maintained by full time forces the cost is less if performed by reserve forces.

As a separate alternative a substantial increase in the size and capability in this area is perhaps more feasible than would first appear. The main problem to any such expansion as previously noted would be personnel rather than equipment. Therefore the solution would require broadening the geographical base to regions not presently included. Administrative costs would increase but not excessively if a Technical Bureau representative for management control plus a Surface Training Group for general military control was available in the general area.

NOTES

1. Based on 14 aircraft per squadron, and average aircraft costs in excess of 1.8 million dollars per copy.

CHAPTER IX

RECOMMENDATIONS

Many of the recommendations that would have been made have been mentioned throughout the text up to this point. The purpose of these concluding paragraphs then will be primarily to collate, formalize and to mention any additional factors not previously considered that may be pertinent to the final analysis.

One of these factors that applies to the overall problem is the present condition of the United States balance of payments. Excessive purchases abroad, many in the area of defense have created a difficult economic situation. By increasing the mobility of the active forces in continental areas and then by commencing a partial withdrawal of overseas forces the problem will be partially alleviated. The net effect of this type of action would be to reduce dependence on reserve forces. Another point not previously considered with respect to reserve recall or deployment is that it could be considered a sign of weakness in that active forces were less than adequate and we were approaching the limit of our capability.

A third extraneous factor, one that tends to the opposite direction of the two noted above is the natural pre-disposition in the United States, previously mentioned, to utilize Reserves in lieu of Regulars. Despite the fact that the Regular buildup is far beyond any previous peacetime period severe obvious cutbacks in Reserve capability have elicited strong

influential opposition from many quarters in the past and will probably continue to do so in the future.

As far as the total picture is concerned some determination must be made at a policy level as to the severity of the threat, the level of resource we are willing to devote to insuring against it and the types of forces that will be required. What actually can be done in the field of passive deterrence and active defense depends primarily on what will be spent. And what will be spent depends in a large part on the type and level of effectiveness of the additional increments that can be purchased once the basic requirements are fulfilled.

Considering all of the foregoing, personnel, equipment, facilities, capabilities and other pertinent factors it would appear logical to recommend an immediate sizeable reduction approximating 25 percent, in the number of Selected Reserve Flying squadrons and active duty TAR personnel. This should be primarily in the form of closing down of specific facilities but a reduction in level at certain facilities would probably be practical. The primary criteria would be the availability of adequate numbers of capable personnel. Bases in areas of low population density unless required for strategic motives would be the most likely candidates for elimination. If the build up of regular forces in size and capability continues at the expected rate for the next five years as planned it would appear reasonable that eventually the size of this portion of the reserve component could be reduced to less than half of its present

size.

The remaining squadrons should be given the most modern equipment they are capable of operating and maintaining with the aim of reducing the wide existing gap between the effectiveness of a reserve and regular squadron. The one exception to this would be with the fighter and attack aircraft which should be gradually phased out of the reserve program. The newer weapons in this area are too difficult to fly and maintain and the part time pilot and mechanic-technician cannot become truly effective in their use.

Less emphasis should be placed on unit training in this area. Pilots and ground crew members should take their annual training as individuals or small groups with or without their equipment but at a regular installation integrated with the operating forces. Mobilization plans should be based on these individuals augmenting to particular active duty squadrons or stations rather than deploying as a unit which does not appear feasible or probable for the reasons previously noted.

Finally the size and number of the supporting type units should be increased, preferably on a wider geographic basis. Whenever possible existing Surface Reserve or Regular Navy installations should be utilized. By this means the maximum number of interested experienced individuals could be affiliated.

In conclusion, and briefly, it should be noted that all of the foregoing has been based on what this author perceives as a logical develop-

ment of the present situation. In the light of future developments it is conceivable that a different set of conclusions could be drawn from the same material. However, based on the available facts, considering the past and expecting the future as considered herein the above recommendations are considered to be both logical and sound.

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